

85-03  
3-23-04

PROCUREMENT, CONSTRUCTION AND  
EH&S

Duke Power  
EC11E / P.O. Box 1006  
Charlotte, NC 28201-1006

*Carmen Johnson*

Scanned by <i>AC</i>	Date 10/8/12	Doc RCO
-------------------------	-----------------	------------

85-03

May 12, 2004

Mr. Bobby Lutfy  
North Carolina Department of Environment,  
and Natural Resources  
Division of Solid Waste Management  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646

Subject: Duke Energy Corporation - Belews Creek Steam Station  
Flyash Landfill Permit #85-03  
Groundwater Monitoring Report



Dear Mr. Lutfy:

The Belews Creek Flyash Landfill was sampled on March 23, 2004. Attached please find a copy of the Ground Water Monitoring Report, Solid Waste Landfill Monitoring Well Locations and Chain of Custody Record.

All values for pH for this monitoring period were below the minimum groundwater standard of 6.5 pH units at all monitoring wells sampled. The low pH may be attributed to Piedmont soil characteristics.

Iron concentrations at monitoring wells MW-4 (8.5 mg/L), and MW-6 (0.58 mg/L) were above the NC groundwater standard of 0.30 mg/L.

Manganese concentration at monitoring well MW-4 (0.12 mg/L) was above the NC groundwater standard of 0.050 mg/L.

All other parameters were below the NC groundwater standards. All values reported in the attached report are dependent on the accuracy of the approved analytical methods used to measure parameters.

Please note that the TOX analytical result for monitoring well MW-4 should be considered an estimate. The TOX sample container was broken in the laboratory and the TOX analytical result was obtained from the BOD sample container.

The next semi-annual sampling of the landfill will occur in October 2004. If you have questions, please call me at (704) 382-4309.

Sincerely,

*Allen Stowe*

Allen Stowe  
Scientist, Environmental Support

Attachments

cc: Mr. Robert Cheek – NC DENR Groundwater Section

**DUKE POWER COMPANY  
GROUNDWATER MONITORING REPORT**

**Facility: Belews Creek Steam Station Fly-Ash Landfill #85-03  
Sample Date: March 23 - 24, 2004 (Field and Geochemistry Data)**

Parameter	Units	Parameter Codes	Monitoring Well Identification										FIELD BLANK	15A NCAC 2L MCL*	
			MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	OB-1						
Field Certificate No.			5193	5193	5193	5193	5193	5193	5193	5193	5193	5193	5193	5193	
Lab Certificate No.			248	248	248	248	248	248	248	248	248	248	248	248	
Field pH	Std. Units		5.0	5.6	5.7	6.4	108	17	27	15	15	15	15	15	6.5-8.5
Field Spec. Conductance	umho/cm		2	43	28	13	13	13	13	13	13	13	13	13	
Temperature	C		13	14	13	13	13	13	13	13	13	13	13	13	
Top Casing	mssl-feet		853.02	853.39	843.19	768.11	787.17	837.67	888.37	888.37	888.37	888.37	888.37	888.37	
Depth to Water	feet		30.46	40.29	38.27	14.89	25.60	28.41	39.63	39.63	39.63	39.63	39.63	39.63	
Water Elevation	mssl-feet		822.56	813.10	804.92	753.22	761.57	809.26	848.74	848.74	848.74	848.74	848.74	848.74	
Well Depth	feet		47.20	50.00	49.50	40.20	60.20	36.84	85.40	85.40	85.40	85.40	85.40	85.40	
Arsenic	mg/l		01002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.010
Barium	mg/l		01007	0.015	0.068	0.048	0.017	0.027	0.050	0.050	0.050	0.050	0.050	0.050	2.0
BOD	mg/l		00310	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Cadmium	mg/l		01027	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0050
Chemical Oxygen Demand	mg/l		00340	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	
Chloride	mg/l		00940	1.3	3.0	10	2.1	1.2	2.4	2.4	2.4	2.4	2.4	2.4	250
Chromium	mg/l		01034	<0.0010	0.0021	0.0012	0.029	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.050
Copper	mg/l		01042	<0.0020	<0.0020	<0.0020	0.010	0.025	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	1.0
Fluoride	mg/l		00951	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	2.0
Iron	mg/l		01045	0.096	0.077	0.18	8.5	0.17	0.58	0.58	0.58	0.58	0.58	0.58	0.30
Lab pH			00400	4.9	5.5	5.6	6.3	5.7	5.5	5.5	5.5	5.5	5.5	5.5	6.5-8.5
Lead	mg/l		01051	<0.0020	<0.0020	<0.0020	<0.0020	0.0026	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.015
Manganese	mg/l		01055	0.020	0.0044	0.0060	0.12	0.0071	0.0094	0.0094	0.0094	0.0094	0.0094	0.0094	0.050
Mercury	mg/l		71900	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0011
Nitrate (as Nitrogen)	mg-N/l		00630	0.14	0.56	<0.020	0.53	0.93	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	10
Selenium	mg/l		01147	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.050
Silver	mg/l		01077	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.018
Sulfate	mg/l		00945	4.9	0.39	0.66	11	0.27	0.18	0.18	0.18	0.18	0.18	0.18	250
Total Dissolved Solids	mg/l		03613	31	57	40	109	55	55	55	55	55	55	55	500
Total Organic Carbon	mg/l		00680	0.24	0.22	0.19	0.26	0.14	0.28	0.28	0.28	0.28	0.28	0.28	
Total Organic Halogen	mg/l			<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	
Zinc	mg/l		01092	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	2.1

\* Maximum Contaminant Level (MCL)

\*\* Result is estimate only, TOX sample container broken and analysis were obtained from BOD sample.

Authorized Release By: Terrell A. Henderson Date: 5/5/04



For Detailed Instructions, see:  
<http://dewww.essenvi/coc/>

Analytical Laboratory Services  
 Mail Code MGO3A2 (Building 7405)  
 13339 Hagers Ferry Rd  
 Huntersville, N. C. 28078  
 (704) 875-5245  
 Fax: (704) 875-5039

1) Project Name: **BELEWS CRK LANDFILL**  
 2) Phone No: 875-5257  
 3) Client: **C. Campbell / Allen Stowe**  
 4) Fax No: 875-5032  
 5) Business Unit: 20003  
 6) Process: ENVWS  
 7) Resp. To: BC00  
 9) Activity ID: MGO3A3  
 10) Mail Code: MGO3A3

27-0-0  
 LAB USE ONLY

**CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM**

ANALYTICAL LABORATORY USE ONLY  
 Sample ID: **04-MW-0277-GWATEC**  
 Date/Time: **3/23/04 11:10**  
 Sample Origin: **BELEWS CRK LANDFILL**  
 Sample Matrix: **GROUNDWATER**  
 Sample Volume: **1000 mL**  
 Sample Temp: **10°C**  
 Preservation: **1=HCl, 2=H2SO4, 3=HNO3, 4=Ice, 5=Nitrate**

19 Page 1 of 1  
 DISTRIBUTION COPY TO  
 ORIGINAL TO LAB. CLIENT

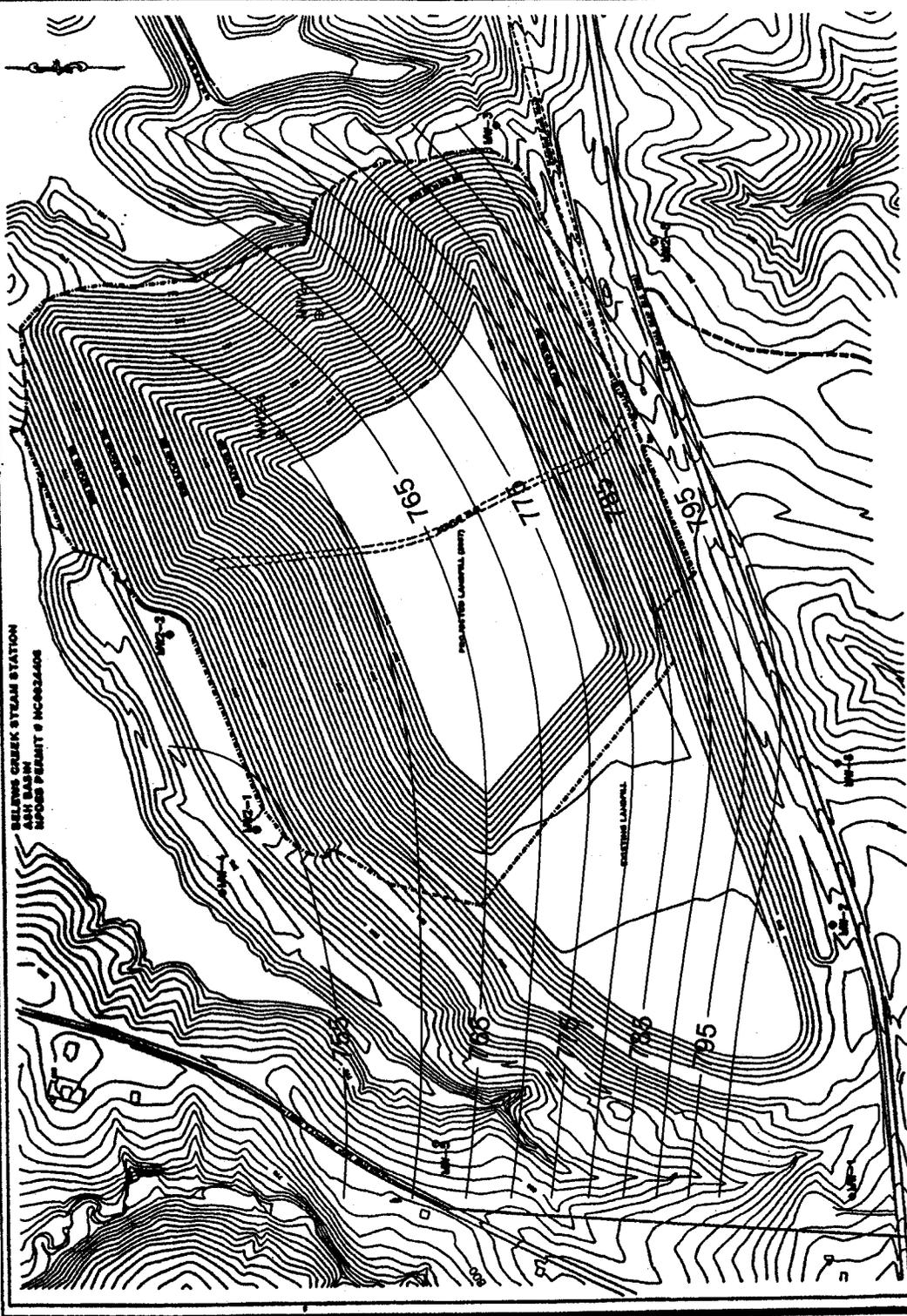
12 Chem Desktop No.	13 Sample Description or ID	14 Collection Information		15 Analyses	16 Grab	NO3, Cl, F, SO4, ALK, LAB pH	TDS	BOD	Hg	MET - (As, Ba, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, K, Se, Ag, Na, Zn)	FILTERED MET (As, Ba, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, K, Se, Ag, Na, Zn)	TOX	TOC, COD	Chlorine (ppm)	20 Total # of Containers
		Date	Time												
	MW-1	3/23/04	0945	Ross Miller	X	1	1	1	1	1	1	1	1	1	1
	MW-2	3/23/04	0845	Ross Miller	X	1	1	1	1	1	1	1	1	1	1
	MW-3	3/23/04	1545	Ross Miller	X	1	1	1	1	1	1	1	1	1	1
	MW-4	3/23/04	1745	L.O. Cobell	X	1	1	1	1	1	1	1	1	1	1
	MW-5	3/23/04	1430	Ross Miller	X	1	1	1	1	1	1	1	1	1	1
	MW-6	3/23/04	1110	Ross Miller	X	1	1	1	1	1	1	1	1	1	1
	FIELD BANK	3/23/04	1545	Ross Miller	X	1	1	1	1	1	1	1	1	1	1

Customer to sign & date below

21) Relinquished By: **L.O. Cobell** Date/Time: **3/23/04 1745**  
 Relinquished By: **[Signature]** Date/Time: **[Signature]**  
 Relinquished By: **[Signature]** Date/Time: **[Signature]**  
 23) See/Locked By: **[Signature]** Date/Time: **[Signature]**

22) Requested Turnaround:  14 Days  7 Days  48 Hr  
 \*Other:  Will Apply \*Add. Cost

Customer, Important please indicate desired turnaround



BELEWS CREEK STREAM STATION  
 5450 BALKIN  
 19000 PERMIT # MC000000

795

775

755

735

715

695

675

655

635

615

595

575

555

535

515

495

475

455

435

415

395

375

355

335

315

295

275

255

235

215

195

175

155

135

115

95

75

55

35

15

-5

-25

-45

-65

-85

-105

-125

-145

-165

-185

-205

-225

-245

-265

-285

-305

-325

-345

-365

-385

-405

-425

-445

-465

-485

-505

-525

-545

-565

-585

-605

-625

-645

-665

-685

-705

-725

-745

-765

-785

-805

-825

-845

-865

-885

-905

-925

-945

-965

-985

-1005

-1025

-1045

-1065

-1085

-1105

-1125

-1145

-1165

-1185

-1205

-1225

-1245

-1265

-1285

-1305

-1325

-1345

-1365

-1385

-1405

-1425

-1445

-1465

-1485

-1505

-1525

-1545

-1565

-1585

-1605

-1625

-1645

-1665

-1685

-1705

-1725

-1745

-1765

-1785

-1805

-1825

-1845

-1865

-1885

-1905

-1925

-1945

-1965

-1985

-2005

-2025

-2045

-2065

-2085

-2105

-2125

-2145

-2165

-2185

-2205

-2225

-2245

-2265

-2285

-2305

-2325

-2345

-2365

-2385

-2405

-2425

-2445

-2465

-2485

-2505

-2525

-2545

-2565

-2585

-2605

-2625

-2645

-2665

-2685

-2705

-2725

-2745

-2765

-2785

-2805

-2825

-2845

-2865

-2885

-2905

-2925

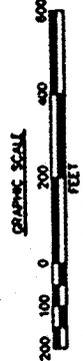
-2945

-2965

-2985

-3005

DRAWING NOT TO SCALE



LEGEND  
 PROPOSED FINAL CONTOURS 12/2007  
 FOOTPRINT OF 2003-2007 EXPANSION  
 MONITORING WELL  
 OBSERVATION WELL

DUKE POWER COMPANY  
 BELEWS CREEK ASH LANDFILL (PROPOSED)  
 FIGURE NO. 1

GROUNDWATER CONTOURS PLOTTED FROM WATER LEVEL DATA  
 COLLECTED ON MARCH 23 & 24, 2004.